

Abstract

Spatial processing of wideband and multicarrier signals in a multipath environment is achieved
5 by exploiting frequency diversity. The amplitude-versus-frequency profile of received signals is affected
by multipath fading. Spatial separation of the transmitters results in transmitted signals undergoing
different fades. Providing the transmitted signals with unique amplitude-versus-frequency profiles ensures
that received signals have different profiles, even when multipath fading is negligible. A diversity
receiver separates the received signals into components and spatially demultiplexes the interfering signals
10 in each of the frequency components using cancellation, constellation, or correlation processes.

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